

JEFFERSON JOURNAL

November/December 2021

Birds And The Burn

**Effects Of The Almeda Fire On
The Birds Of The Bear Creek Greenway**



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FEATURED

6 Birds And The Burn: Effects Of The Almeda Fire On The Birds Of The Bear Creek Greenway

By Pepper Trail and Nate Trimble

No one in the Rogue Valley will forget September 8, 2020, when the Almeda Fire roared north from the edge of Ashland through Talent and Phoenix to the edge of Medford. Thousands of homes were destroyed in a matter of hours, and only the courageous efforts of our firefighters stopped the march of the wind-driven flames and prevented catastrophic loss of life.

11 We Need To Talk About Your Gas Stove, Your Health And Climate Change

By Jeff Brady

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5 Tuned In | Paul Westhelle

19 Jefferson Almanac | Diana Coogle

21 Inside The Box | Scott Dewing

24 JPR Radio Stations & Programs

27 JPR News Focus: Health | April Ehrlich

29 Down To Earth | Jes Burns

31 Theatre | Geoff Ridden

33 JPR News Focus: Fire | Cassandra Profita

35 NPR News Focus: Race | Emma Bowman

39 Press Pass | Liam Moriarty

41 Underground History | Chelsea Rose

43 Outside The Lines | Don Kahle

45 Milk Street | Christopher Kimball

46 Poetry | Charlie McGonigle

COVER: A Great Egret preens under smoky skies, Bear Creek Greenway, August 2021.

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Ready, Set ...

The clear, cool days of Fall are such a welcome change. And, with the change in season comes the culmination of a very difficult and stressful fire season. We've all endured too many smokey days that have kept us indoors and on edge.

Here at JPR, fire has become an ever-present element of our daily work. We've been engaged all year covering the aftermath of last year's Almeda and Obenchain fires—telling the stories of those who lost so much, reporting on the recovery, and working in collaboration with NPR's newly formed Investigations Unit to shine light on the numerous deficiencies in FEMA's federal relief effort. We've also spent time conducting our own rebuilding effort, reconstructing the telecommunications building and replacing all the broadcast equipment of JPR station KSJK/Talent, which became a giant pile of ash in the Almeda Fire.

But, our biggest and most complex initiative this year has been conducting an evaluation of how we served the public during the Almeda and Obenchain fires and developing and implementing a plan to significantly improve our response to future public emergencies. The starting point of this analysis was the recognition that we did not meet our own expectations for public service during these incidents. Given the general effectiveness and efficiency of JPR's operations, and the high level of motivation of JPR staff, that was a hard pill to swallow. But, the facts were clear—established external communication procedures left us with inadequate and untimely information to convey to citizens, the way our complex technical plant was configured did not allow us to systematically interrupt our own signals quick enough, our internal communication and training were not clear or detailed enough to empower decisive action and we did not have a structured chain of command in place to adapt to changing conditions.

I'm proud of how quickly we moved as a group from being defensive about our failings to identifying problems and finding solutions as we addressed this issue. And the plan that we developed together and implemented this fire season has been a giant step in the right direction. Specifically, our plan included:

- Creating a comprehensive manual for addressing public emergencies that includes a decision-making/action matrix for the most predictable emergency scenarios. The manual is very detailed and includes clarity on all aspects of decision making, acceptable sources of information, processes and procedures, contingency planning, and pre-written scripts. One of the problems we faced during last September's fires was that several of our news staff had homes in the evacuation zones and needed to make sure their families were safe before returning to their work. The manual provides all programming staff with the training, direction and tools necessary to act, no matter their role at JPR.

I'm proud of how quickly we moved as a group from being defensive about our failings to identifying problems and finding solutions as we addressed this issue.

- Purchasing, installing and programming new technology that creates a simple, user-friendly way to strategically interrupt our radio signals within geographic zones so that we can alert listeners who may be in danger without alarming others outside those zones. The zones are well-defined on a color-coded map so that communication about a decision to alert residents in a zone can be concise and clearly understood. You may have heard several of these announcements this summer.
- Installing and operating a backup system for connecting to the Internet. The SOU campus lost Internet connectivity when the fiber backbone that follows the I-5 corridor was damaged in the Almeda fire. This significantly hampered our ability to connect to public safety agencies and law enforcement for information. The redundant system we installed does not rely on the main fiber backbone serving the Rogue Valley.
- Assembling a database of the primary emergency contacts in every county in our listening area. This database will be updated regularly. We also queried public safety agencies on the best way we can help serve the public during public emergencies.
- Creating an online tool called the "JPR Wildfire Tracker" that tracked the status of every active wildfire during this summer's wildfire season. While it was a grueling task at times to keep current, we received very positive feedback about this tool from users of ijpr.org.
- Establishing the JPR studios as a well-equipped evacuation facility. We now stock food, water and sleeping supplies to accommodate 75 people-days (25 people for 3 days, 10 people for 7.5 days, etc.). This will allow core staff, and their families if necessary, to be safe at JPR so that staff can serve the public in a prolonged emergency. Our studios on the SOU campus are masonry clad, have modern fire suppression systems installed, and are surrounded by excellent defensible space. We recognized that staff could not leave their families so we planned to support family members as well.

As I write this column, I'm listening to JPR during our Fall Fund Drive. I just heard one of the great spots a listener helped create to inspire others to support our work and I'm reminded of our mutual responsibilities to each other. Your support has enabled us to take important steps to be a better, more effective organization this past year. And, we're more committed than ever to achieving results that create stronger, safer communities in our region.



Paul Westhelle is
JPR's Executive Director.



How will bird populations along the Greenway respond to the fire and the restoration efforts?

PHOTO: PEPPER TRAIL

The view from the Bear Creek bridge between Talent and Ashland in December 2020. Straw placed to prevent erosion covers the bank of the creek. Almost all undergrowth was lost in this severely burned area.

Birds And The Burn: Effects of the Almeda Fire on the Birds of the Bear Creek Greenway

By Pepper Trail and Nate Trimble

No one in the Rogue Valley will forget September 8, 2020, when the Almeda Fire roared north from the edge of Ashland through Talent and Phoenix to the edge of Medford. Thousands of homes were destroyed in a matter of hours, and only the courageous efforts of our firefighters stopped the march of the wind-driven flames and prevented catastrophic loss of life.

The main corridor of the fire's spread was along Bear Creek, and large areas of the riparian (river and creek-side) forest shading the creek and the Bear Creek Greenway burned. Dominated by large cottonwood and Oregon ash trees, this was the largest remnant of hardwood forest left in the valley south of the Rogue River. There was a dense undergrowth of non-native Himalayan blackberry along the creek, which provided fuel for the fast-moving fire. The intense flames consumed the undergrowth and

killed many large trees, but left most of the trees standing as the wind pushed the fire north.

Riparian areas occupy a relatively small amount of land in Oregon, but harbor a disproportionately high number of plants and animals. They often are heavily impacted by human activity because they tend to be places where people build communities and farms. This makes what remains of our intact riparian habitat especially important to wildlife.

The Bear Creek forest provided many "natural services" for the wildlife and people of the Rogue Valley. The tall trees shaded and cooled the creek, improving conditions for the salmon and steelhead that spawn and rear there. The forest was the favored habitat for many bird species, including colorful Neotropical migrants that brighten our summers, like Bullock's Orioles and Yel-



A Wrentit emerges briefly from the dense creekside undergrowth where it lives. This is one of the species that lost much habitat along Bear Creek in the Almeda fire.



A Northern Flicker rests on a fire-scorched limb.

low Warblers. The dense undergrowth—yes, even the non-native blackberries—provided important nesting habitat for birds like Spotted Towhees, Wrentits, and Yellow-breasted Chats, and shelter for Golden-crowned Sparrows, Dark-eyed Juncos, and other winter birds. And the Greenway path was a beloved walking and bicycling route connecting the towns of Ashland, Talent, Phoenix, Medford, and Central Point.

In the aftermath of the Almeda Fire, the valley responded with tremendous energy and determination. A year on, rebuilding is well under way, and “Talent Strong” and “Phoenix Rising” are proud mottos of those resilient towns. A huge amount of work has also been done to protect the fire-damaged Greenway and begin the long process of restoration. This has included deploying straw “wattles” and sowing fast-growing grasses for erosion control, clearing burned and unburned areas of non-native blackberries, and planting thousands of native trees and shrubs. This work was done by a diverse array of organizations, including Jackson County Parks, Rogue Valley Council of Governments (RVCOG), Oregon Department of Environmental Quality, the Inter-Tribal Ecosystem Restoration Partnership, the Rogue River Watershed Council, Lomakatsi, and many others.

More problematically, an aggressive campaign of snag removal was also carried out. While this was a necessary safety measure adjacent to the Greenway path and nearby roads, many snags were cut that posed no apparent threat, even including large “granary” trees used for acorn storage by Acorn Woodpeckers. Burned snags may look unsightly to some, but they provide crucial nesting habitat for cavity-nesting birds and bats, as well as rich foraging sites for woodpeckers and other birds. Wherever possible, they should be left standing for their many wildlife benefits.

How will bird populations along the Greenway respond to the fire and the restoration efforts? To study this important question, a group of local scientists and birders came together in the fall of 2020 and developed the Bear Creek Community Bird Survey (BCCBS). This is a monitoring effort by community scientists coordinated through the Rogue Valley Audubon Society, in partnership with the Klamath Bird Observatory, Rogue River Watershed Council, and the Southern Oregon Land Conservancy.

Seven stretches of the Greenway were selected for the bird surveys, with a survey protocol designed by expert naturalists

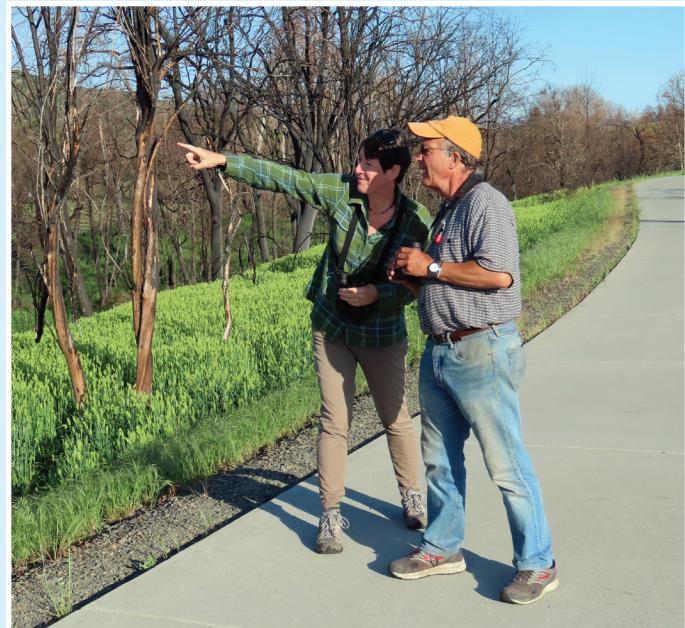


PHOTO: PEPPER TRAIL

Bear Creek Community Bird Survey [or BCCBS] volunteers Cat Gould and Jeff LaLande spot a Red-tailed Hawk on the Ashland section of the Greenway.

Frank Lospalluto, Nate Trimble, and Klamath Bird Observatory Biologists Sarah Rockwell and Jaime Stephens. Five of the sites had experienced significant impacts from the Almeda Fire: Ashland Greenway, Lynn Newbry, Suncrest, Blue Heron Park, and Mingus Pond. These were the “burned” sites. Two other areas had no fire impacts and were the “unburned” sites: North Mountain Park, and Dean Creek Road in Central Point. Each site consists of two approximately half-mile stretches of the Greenway path. Groups of volunteers, including at least one experienced birder, walk slowly along these “transects” and record all birds identified by sight or sound using the eBird mobile app. Run by the Cornell Laboratory of Ornithology, eBird (<https://ebird.org/home>) is the cloud-based global repository for bird observation data, with over a billion (yes, BILLION) observations recorded.

Our surveys began in January 2021, and have been conducted twice a month at each site. I am proud to say that over 30,000 of eBird’s billion bird records have now been contributed by the

TABLE 1 Average number of bird detections per visit.

SPECIES	North Mt Park (unburned)	Dean Creek (unburned)	Ashland	Lynn Newbry	Suncrest	Blue Heron	Mingus Pond
Yellow-br. Chat	0.56	1.34	0.31	0.41	0	0.03	0
Spotted Towhee	6.75	7.2	1.9	2.88	2.06	1.8	2.1
Yellow Warbler	0.38	1.22	0.19	0.22	0.09	0.06	0.06
Eur. Starling	24.6	21.6	8.1	17.8	23.2	19.7	17.5
Amer. Robin	9.6	4.6	10.2	8.1	10	16.6	9.4

Riparian nesters Yellow-breasted Chat, Spotted Towhee, and Yellow Warbler have been detected more often in unburned versus burned sites. European Starlings and American Robins showed no strong difference between unburned and burned sites.



A Song Sparrow peers from a willow thicket along Bear Creek.



A male Yellow Warbler, newly returned from Mexico, enjoys a spring day beside Bear Creek.

BELOW: The Almeda fire scorched several big ponderosa pines used as granary trees by groups of Acorn Woodpeckers. Unfortunately, this one in Ashland was needlessly cut down.

Bear Creek Community Bird Survey! Dozens of faithful volunteers have devoted over 500 hours to the project so far.

So, what have we discovered? Our goal is to keep the BCCBS going for years, because the process of recovery from the fire will be a long one. Data from the first eight months are too preliminary to tell us about trends. But they do provide an essential baseline against which we will measure the responses of bird populations to the fire, and they give us an interesting snapshot of the status of birds in the Rogue Valley.

It's clear from the early results of this study that there are still a LOT of birds, both in number of species and number of individuals, using the Bear Creek Greenway, even in areas of severe burn. As of the end of August 2021, 134 species have been recorded, including 127 species in the sites burned by the 2020 fires. In addition to familiar year-round residents like Song Sparrows and Black-capped Chickadees, the Greenway remains important habitat for neotropical migrants that call Oregon home only during the nesting season like Yellow Warblers and Bullock's Orioles, as well as for winter visitors from farther north, like Golden-crowned Sparrows and the fierce little falcons called Merlins.

While the burned areas are still supporting an abundance of wildlife, simply counting the number of birds or bird species



observed does not give the full picture of the fire's impact on the creek-side habitat of Bear Creek.

Large scale habitat changes often favor some species over others, and the fact that many birds are being observed doesn't mean that the Greenway hasn't experienced drastic changes in bird distribution and composition. Combining all seven sites along Bear Creek, the most commonly observed bird was what? If you guessed European Starling, I'm afraid you're right.



A Bewick's Wren sings lustily from its thorny perch on a blackberry stem.

INSET: Wintering Peregrine Falcons were regularly spotted during the Bear Creek Community Bird Surveys.

These non-native birds are highly adaptable and favor foraging on open ground and nesting in cavities of dead trees. The changes from the 2020 fires may have actually enhanced the habitat for birds like starlings but reduced habitat for our more sensitive native riparian species such as Yellow-breasted Chats. Birds such as Yellow-breasted Chats, Song Sparrows, and others depend on dense thickets of broadleaf shrubs next to freshwater to forage, hide from predators, and nest.

As this study progresses over time, the changes in detections of riparian species versus birds that prefer open habitat or are more generalists (able to thrive in many habitat types) will be of particular interest. These will help us determine what impacts the 2020 fires and subsequent management practices have had on the habitat of the Bear Creek Greenway.

Preliminary results do seem to show a substantial difference in some riparian bird species detections in unburned sites versus burned sites. Yellow-breasted Chats breed almost exclusively in riparian habitat in Oregon and so far have been detected more often in the unburned sites, with two of the burned sites showing no Yellow-breasted Chat detections at all this year. Spotted Towhees, which are less tied to riparian areas specifically but still require dense shrubs to forage and nest, showed a similar pattern to the Yellow-breasted Chats. Yellow Warblers nest in riparian canopy and sub-canopy and also have shown substantially more detections in the unburned sites than burned sites so

far. In contrast to the bird species that depend on intact riparian habitat, European Starlings and American Robins have shown little to no pattern in detection in burned versus unburned sites. These are both generalists that tend to forage on open ground.

While it makes sense that birds that nest in dense blackberry or willow thickets, or use riparian trees to forage and nest will be less common on sites where much of the shrub and tree cover has burned away, we stress that these results are very preliminary. It's much too early to come to definite conclusions about the recovery of Bear Creek post fire and the effects of the fire on bird populations. In the future, it will be particularly interesting to see if the number of riparian bird detections in the burned sites begins to increase as the shrubs and trees they depend on come back.

It will likely take years of data, and careful analysis, to tell the full story of the effects of the Almeda Fire on the Bear Creek Greenway and its birds. The dedicated volunteers of the Bear Creek Community Bird Survey are determined to see this story through to the end!

Nate Trimble is a wildlife biologist and artist in Ashland, Oregon. He has worked as a field biologist, volunteer coordinator, and volunteer on several bird research projects in Oregon and Northern California.

Pepper Trail is an ornithologist and the conservation co-chair of the Rogue Valley Audubon Society.

When you have a gas stove, that combustion is actually occurring right in your kitchen — you can see the blue flame down there...
There is no smoke-free combustion.

— Josiah Kephart, environmental epidemiologist —

We Need To Talk About Your Gas Stove, Your Health And Climate Change

By Jeff Brady

Americans love their gas stoves. It's a romance fueled by a decades-old "cooking with gas" campaign from utilities that includes vintage advertisements, a cringeworthy 1980s rap video and, more recently, social media personalities. The details have changed over time, but the message is the same: Using a gas stove makes you a better cook.

But the beloved gas stove has become a focal point in a fight over whether gas should even exist in the 35% of U.S. homes that cook with it.

Environmental groups are focused on potential health effects. Burning gas emits pollutants that can cause or worsen respiratory illnesses. Residential appliances like gas-powered furnaces and water heaters vent pollution outside, but the stove "is the one gas appliance in your home that is most likely unvented," says Brady Seals with RMI, formerly Rocky Mountain Institute.

The focus on possible health risks from stoves is part of the broader campaign by environmentalists to kick gas out of buildings to fight climate change. Commercial and residential buildings account for about 13% of heat-trapping emissions, mainly from the use of gas appliances.

Those groups won a significant victory recently when California developed new standards that, once finalized, will require more ventilation for gas stoves than for electric ones



JEFF BRADY/NPR

Environmental epidemiologist Josiah Kephart studies pollution from cooking. He says it's his family's highest priority to get rid of their gas stove and replace it with a less-polluting electric one.

TOP OF PAGE: Environmental groups focused on climate change want to eliminate natural gas use in buildings, and that includes cooking with gas stoves.



A nitrogen dioxide air monitor in Josiah Kephart's kitchen shows 0.159 parts per million, or 159 parts per billion. That's above the World Health Organization hourly guideline of 106 ppb.

starting in 2023. The Biden administration's climate plan also calls for government incentives that would encourage people to switch from residential gas to all-electric.

This battle is aimed at influencing your decision the next time you buy a new cookstove.

An epidemiologist reconsiders his gas stove

Josiah Kephart is an environmental epidemiologist at Drexel University in Philadelphia who researches indoor air pollution from cookstoves in Latin America. On a sunny summer morning we met in his kitchen to test the pollution from his family's gas stove.

If you have an electric stove, the energy for cooking may come from fossil fuels, but the combustion happens at a power plant far away, Kephart says. "When you have a gas stove, that combustion is actually occurring right in your kitchen – you can see the blue flame down there," he says. "There is no smoke-free combustion."

The most common pollutants from gas stoves are nitrogen dioxide (NO₂), carbon monoxide and formaldehyde. Advocates now are mostly focused on NO₂, which the Environmental Protection Agency says is a toxic gas that even in low concentrations can trigger breathing problems for people with asthma or chronic obstructive pulmonary disease.

To learn how much NO₂ Kephart's gas stove releases, NPR rented an air monitor.

Kephart has two young children, and research, including this 1992 study, shows that kids who live in a home with a gas stove have about a 20% increased risk of developing respiratory illness.

At first, the air monitor shows background levels in Kephart's kitchen are about 24 parts per billion (ppb). That's expected for a home with a gas stove, but still higher than the World Health Organization (WHO) annual average guideline of 5 ppb. The EPA does not have standards for indoor NO₂ levels.

Kephart starts by boiling a pot of water and baking blueberry muffins. "So this is supposed to be a very normal scenario of cooking a meal in the kitchen: We have the oven on 375 and one stove burner on," he says.

After 12 minutes, the monitor starts to spike, showing NO₂ levels of 168 ppb. "So now we have exceeded the [WHO] hourly guideline of 106 ppb by about 50%," says Kephart. "If you have kids or any sort of lung condition, this is at a level where, in the literature – in the science – we have seen people start to have these changes in their lungs that could give them worse symptoms or could worsen their disease."

After half an hour, the air monitor shows 207 ppb – nearly twice the WHO guideline.

There is no hood over Kephart's stove to vent the pollution outside. Instead, like many Philadelphia row houses, there's an old room fan high up in a wall. It vents outside, but even after Kephart turns it on, NO₂ levels remain high. Kephart says that's because the fan is about 6 feet away.

We head upstairs to check NO₂ levels in his children's bedroom. At first, levels are low because the bedroom door is closed and a window is open to let in fresh air. With the door open, just a few minutes later the levels rise to 109 ppb, exceeding the WHO guideline.

Kephart's family moved into this row house about a year ago, and his wife likes cooking on a gas stove. But, he says, "It's our highest family priority to get it out and to get an electric stove."

He says it's not a given that having a gas stove in your home will make you sick or lead to asthma. It's a risk calculation. "If you have a large kitchen with really up-to-date ventilation systems," he says, "and you have a healthy body, this may not be your biggest concern or the biggest risk to your health."

But when it comes to his children, Kephart is extra cautious. "It doesn't make any sense to me to add to the risk of them developing asthma or other respiratory diseases by having this source of pollution right inside our house," he says.

No federal agency regulates gas stove emissions

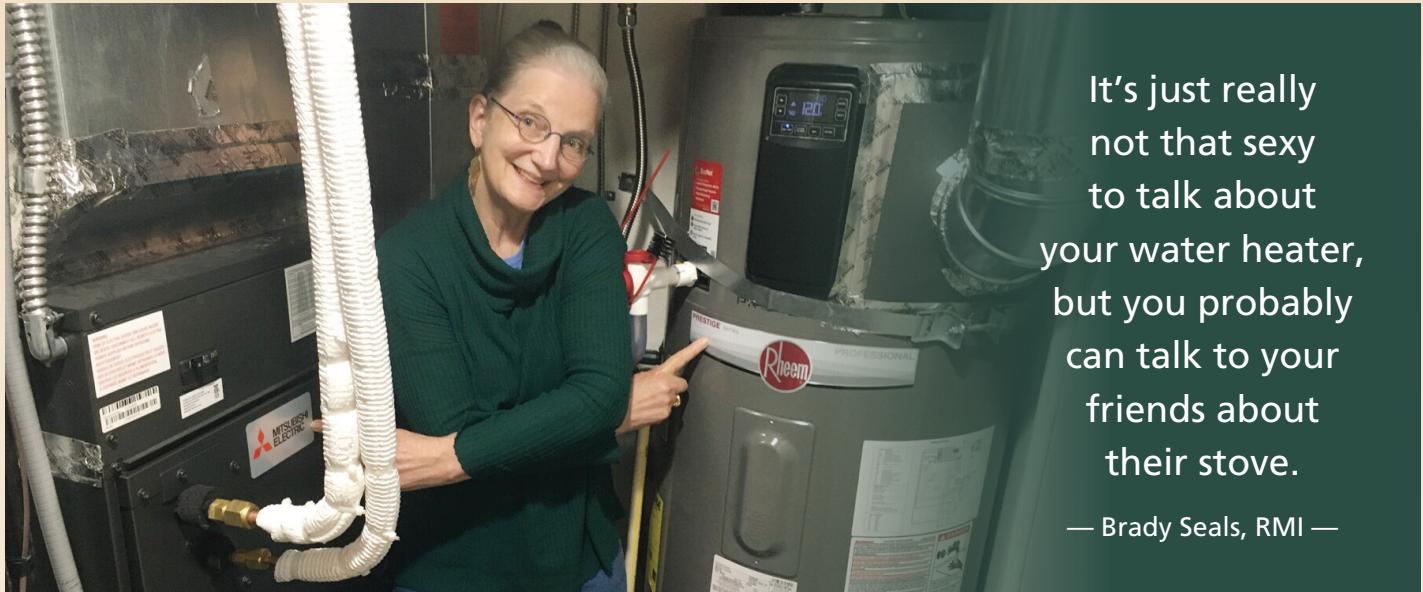
Federal agencies, including the EPA and the Consumer Product Safety Commission (CPSC), say they are paying attention to the gas stove pollution issue. But none has moved to regulate potentially harmful emissions, a point the gas industry emphasizes to dismiss concerns about possible health effects of stoves.

"Someone's going to have to claim this issue and really make a change, because I think as more consumers learn about it, you feel upset," says Seals with RMI.

RMI and three other environmental groups issued a report last year labeling gas stove emissions a threat to human health. They called on policymakers to regulate them more strictly and provide incentives for Americans to switch to electric.

Research into the possible health effects of residential stoves isn't news to the gas industry.

For decades, gas utilities themselves and their powerful trade group, the AGA, have conducted their own research on stove pollutants, including nitrogen dioxide. That work even led to new ways of reducing NO₂ pollution, such as this patent for inserting a metal rod into the flame to lower the temperature and reduce NO₂ emissions. In 1990, a big step was getting rid of pilot lights that burn 24 hours a day. Still, it's not possible to entirely eliminate emissions when burning an unvented fossil fuel in your home.



Jane Stackhouse points to the electric heat pump (left) that replaced a gas furnace and to a more efficient electric water heater (right). Her utility bills are about the same, but now she also has air conditioning for extra warm days made worse by climate change.

JANE STACKHOUSE

It's just really
not that sexy
to talk about
your water heater,
but you probably
can talk to your
friends about
their stove.

— Brady Seals, RMI —

Now, the gas utility industry sees this growing research on health effects of stoves as an existential threat. The AGA responded to the RMI study by pushing back. It released public fact sheets to counter the report and rebuttals to individual articles in *The Wall Street Journal*, *The Atlantic* and on The Weather Channel.

Internally, the AGA developed a response plan that lays out a timeline for rebutting the RMI report. The timeline was obtained by the environmental watchdog group Climate Investigations Center through a public records request and shared with NPR.

The AGA planned a new research project comparing emissions from electric stoves to gas ones. Vice President for Communications Jennifer O'Shea offered no details about the results so far. "We continue to focus on this important issue to ensure that consumers understand the benefits and safety around cooking with gas," she said in an email. "We will keep you posted as we have new data to share."

The AGA responds to indoor air quality concerns for gas stoves by pointing out that cooking fumes come from all types of stoves. While those can be a significant source of air pollution, scientists specifically identified homes with a gas stove as a risk for children in the 1992 study. The AGA dismisses the research as a literature review of other studies. But the World Health Organization cites the study and others in developing its most-recent indoor air pollution guidelines.

Your stove just needs to vent

To reduce NO₂ emissions in your home, the EPA suggests using an exhaust fan above your gas stove that's vented to the outdoors. The AGA says that while all gas-fired residential cooking ranges are designed to operate *without* outdoor ventilation, installing one can improve indoor air quality.

In the absence of federal oversight, California is taking action. The California Energy Commission (CEC) has approved standards that would require extra ventilation for gas

stoves over electric ones. Smaller living spaces would require even stronger hoods for gas stoves because pollutants reach unhealthy levels faster.

If the rules take effect as planned in 2023, the CEC staff believes they would be the first requirement of this kind in the nation. The rules also would be a significant win for the environmental groups trying to raise concern about the effects of gas stoves on indoor air quality.

In comments to the CEC, the AGA was critical of the proposed standards, saying such decisions should be made at the federal level and through voluntary standards organizations. But federal agencies are moving slowly on this issue, and scientists say the world needs to take dramatic steps now to avoid the worst effects of climate change, including reining in gas use.

The climate connection to your stove

The gas line out the back of your stove is connected to a production and supply chain that leaks methane from start to finish.

"Methane, which is what natural gas is made of, just really wants to leak," says Seals with RMI. That's a problem because methane is a much more potent greenhouse gas than even carbon dioxide, though it doesn't linger in the atmosphere nearly as long.

President Biden's climate plan includes a goal to cut the carbon footprint of buildings in half by 2035 through incentives to retrofit homes and businesses with electric appliances and furnaces.

The AGA says methane emissions from gas utilities account for 2.7% of all greenhouse gas emissions, and they've declined nearly 70% since 1990, even as utilities have added customers. But the rest of the supply chain also leaks methane, including drilling, fracking, processing and transport. Some equipment is designed to vent, but much of the gas that escapes is unintentional and has been linked to tree deaths in places such as Boston and Philadelphia.

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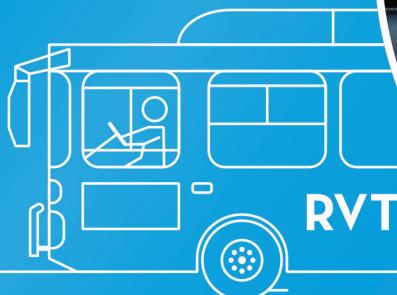
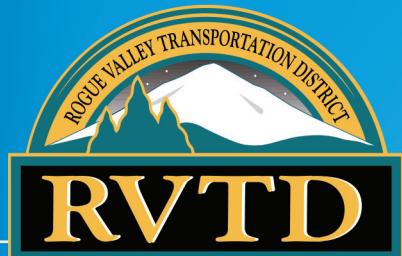


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In recent years, natural gas has been credited with reducing carbon dioxide emissions as cleaner-burning gas power plants replaced coal ones. The overall gas industry, including big oil companies with natural gas holdings, has worked to reduce emissions and supported efforts to more strictly regulate methane emissions. But to avoid the worst consequences of climate change, scientists say most of the world's fossil fuels, including nearly half of the gas reserves, will have to stay in the ground.

Biden's plan also sets a goal of net-zero emissions across the economy by 2050. A growing list of studies, such as ones from Princeton University, Lawrence Berkeley National Laboratory and the National Academy of Sciences, find that meeting that goal will require electrifying buildings, making appliances more efficient, and powering them mostly with emission-free sources like renewable energy.

AGA President and CEO Karen Harbert often says her industry wants to be part of solving the climate problem and has developed a position statement on the issue. "If the goal is to reduce emissions, we're all in," she told NPR earlier this year. "If the goal is to put us out of business, not so much."

Harbert's industry also says it's developing cleaner alternatives, including so-called renewable natural gas from landfills and manure, that can be mixed with hydrogen and run through the existing utility pipeline network.

The gas stove is a "gateway appliance"

To encourage more people to ditch natural gas, environmentalists are focusing on the gas stove. At first it may seem like an odd choice because other gas-burning devices in the home consume more fuel, notably furnaces.

But the stove is seen as a "gateway appliance" that drives the building of a vast fossil fuel infrastructure from wellhead to home. Talk to builders and real estate agents and many will say buyers want a gas stove. And gas utilities have helped fuel that assumption.

"We have to start talking about electrifying our buildings, and it's just really not that sexy to talk about your water heat-

er, but you probably can talk to your friends about their stove," says RMI's Seals. And once the switch to an electric stove happens, the thinking is that people will be more likely to switch water heaters, dryers and furnaces too.

It's not just environmental groups signing on to widespread electrification. *The New England Journal of Medicine* recently published an opinion piece by three physicians who recommended that "new gas appliances be removed from the market," along with ending industry subsidies and banning new gas hookups in buildings.

The Center for American Progress, a liberal think tank, wants the federal government to offer incentives to switch from gas to electric appliances, water heaters and furnaces. The group says that to meet the goal of limiting global warming to under 3 degrees Fahrenheit, switching to electric appliances has to happen now, because if new gas appliances replace old ones, they can last, and keep polluting, for decades. Earth has already warmed about 2 degrees Fahrenheit since the mid-1800s.

She got rid of gas for her grandchildren

Jane Stackhouse of Portland, Ore., is among a small group of people who already have chosen to disconnect from their local gas utility. She did this last year after Republican state lawmakers successfully blocked a climate-focused "cap and trade" bill.

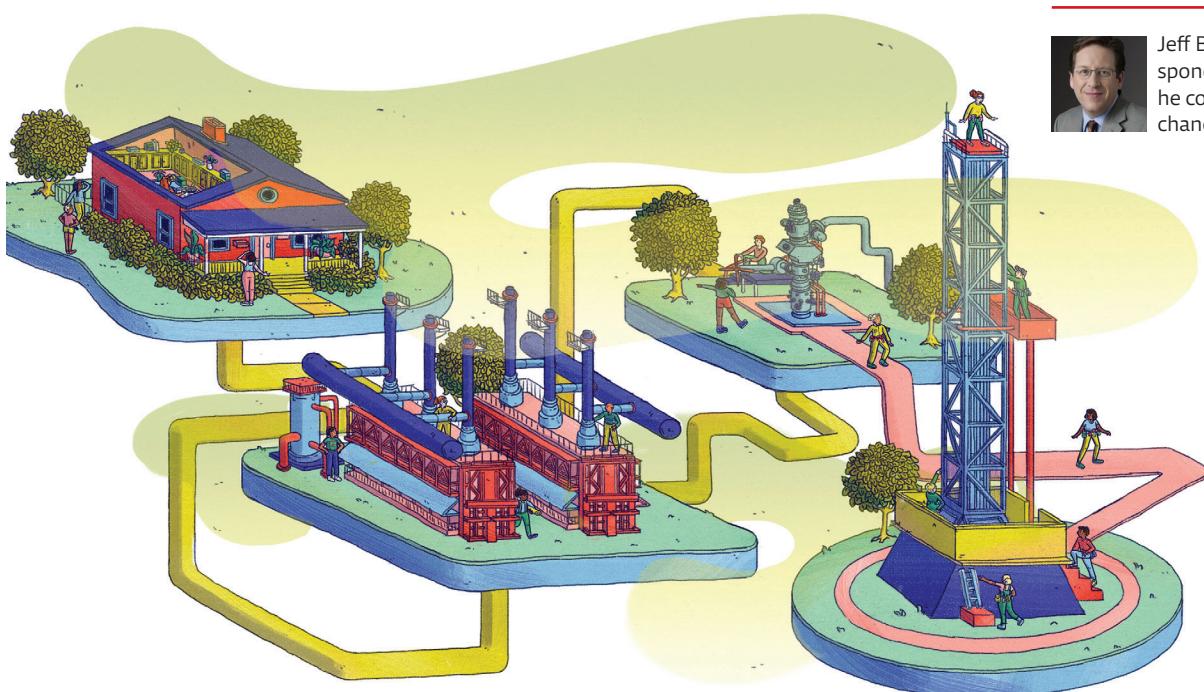
In response, Stackhouse says she decided that "I had control over this duplex that I own, and so I started looking for a contractor who would make me all electric."

She replaced the gas stove, furnace and fireplace in each unit, then installed more efficient electric water heaters. For both sides of the duplex it cost her more than \$35,000. She says her utility bills remained about the same even though she added air conditioning to deal with increasingly hot summers in Portland.

Stackhouse says it makes her verklempt to think about how climate change will affect her grandchildren's lives: "It was my wee contribution to helping clean things up."



Jeff Brady is a National Desk Correspondent based in Philadelphia, where he covers energy issues, climate change and the mid-Atlantic region.





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The Beauty Inside Things

Take a child to an apple tree and pick an apple. Cut it horizontally and open the broken halves. Look! Do you see the secret star inside? The child's delight will reinforce your own sense of wonder at the beauty inside things of nature.

Beauty, of course, is everywhere in nature, but the hidden beauties—the patterns and surprises inside things—are the best of all. When I was a child, my father cut a pine cone lengthwise. Look! Inside! Another tree, with a trunk tapering towards its top and branches to the sides.

A geode is boring on the outside—rough in texture, dull in color, interesting only in being unusually round. Break it open and find purple crystals rising like teeth in the mouth of a sea monster or clustering like petrified forms of the swaying tentacles of an anemone.

The wonder elicited by the beauty of crystalline teeth inside a geode is enhanced by what the imagination does with the slightly menacing image of a sea monster, but when my leg slipped into a crevasse when I was mountain-climbing in the Alps in 1964 and I looked down into the inside of a glacier, the danger was real but the beauty so surprising it blinded fear. The depth was unimaginable. As it plunged, the inside of the glacier echoed a deeper and deeper blue, from light-brightened turquoise to light-deprived turquoise and on beyond the point of telling what color it was. The color inside snow was as surprising as crystals inside a rock or a star in an apple, so surprising and so beautiful I never thought of the danger I might have been in.

But maybe I had the luxury of not paying attention to the danger because I was roped to my companions. Or maybe I saw only the beauty because I was twenty years old and unaware of mortality. Whatever the reason I was able to concentrate on the beauty inside a glacier, I am grateful for it.

Everything has something inside. Inside a seed is a tree; inside a bud is a flower. Inside a raindrop is a rainbow. Inside your eyes is your soul. Maybe a bear becomes angry if you look him in the eye because he doesn't want you to see inside his bare soul. A dog, on the other hand, has such confidence in his dogness he will beg you to look inside his eyes. When I looked at an owl through my binoculars, straight into his big owl eyes, he stared back into mine, then flew away and didn't return to the tree outside my bedroom for years. Was it what he saw in me or what he didn't want me to see in him that kept him away? His privacy? Or my rudeness?

I could, if I wanted, reveal what's inside my heart, but how could I even know what's inside a bucketful of stars? What wonders of color or pattern might be inside a grain of sand? Look deep, look deeper, look deeper still: the beauty inside of things has no end.



Diana Coogle blogs weekly at dianacoogle.blogspot.com. Her latest book is *From Friend to Wife to Widow: Six Brief Years*, poems about her relationship with her late husband, Mike Kohn.



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While the Internet and I are the same age, one of us has increased its capacity and capabilities far more significantly than the other—a trend that I suspect will continue.

Leaping Into The Quantum Internet

The Internet and I have something in common: we're both the same age. At 52, we're not exactly "old" but definitely sliding toward obsolescence and retirement.

The first iteration of the Internet was ARPANET, or the Advanced Research Projects Agency Network. On October 29, 1969, the first data packets were sent from one computer to another over ARPANET, a simple typed message consisting of the letters "LOGIN". The message was sent from a mainframe computer at UCLA to another mainframe at Stanford University. But lo, the system crashed after transmission of only the first two letters.

A single character like an "L" or an "O" is 1 byte in size. A bit is the smallest quantity of digital information and it takes 8 bits to equal 1 byte of data. The first Internet transmission then was only 16 bits of data between two mainframe computers that both filled an entire room at their respective locations.

Fast forward 52 years: I carry a smartphone in my pocket that has a million times the computational power of those 1960s mainframe computers and reliably transmits gigabits of data wirelessly 24/7/365. Today, there are more than 6 billion smartphones with 80 percent of the world's population carrying one around just like me.

While the Internet and I are the same age, one of us has increased its capacity and capabilities far more significantly than the other—a trend that I suspect will continue. The Internet as we know it today will be radically transformed during the remainder of my lifetime to become what is referred to as the "Quantum Internet".

The Quantum Internet will utilize the properties of quantum mechanics to store and transmit data. For example, the quantum property of "entanglement" in which two particles become correlated so that the state of one particle is paired with the state of another particle, will be used to transmit data. A change to one of the pair of particles instantly (well, almost instantly) changes the other—*regardless of the distance between the entangled and correlated particles*. This is why Einstein famously referred to quantum entanglement as "spooky action at a distance".

The process of entangling two particles is pretty simple: you just blast a high-energy blue light laser beam through a crystal and split a blue-light photon into two low-energy red light photons and, voilà, you have two entangled particles whose states are correlated! The tricky part is moving those

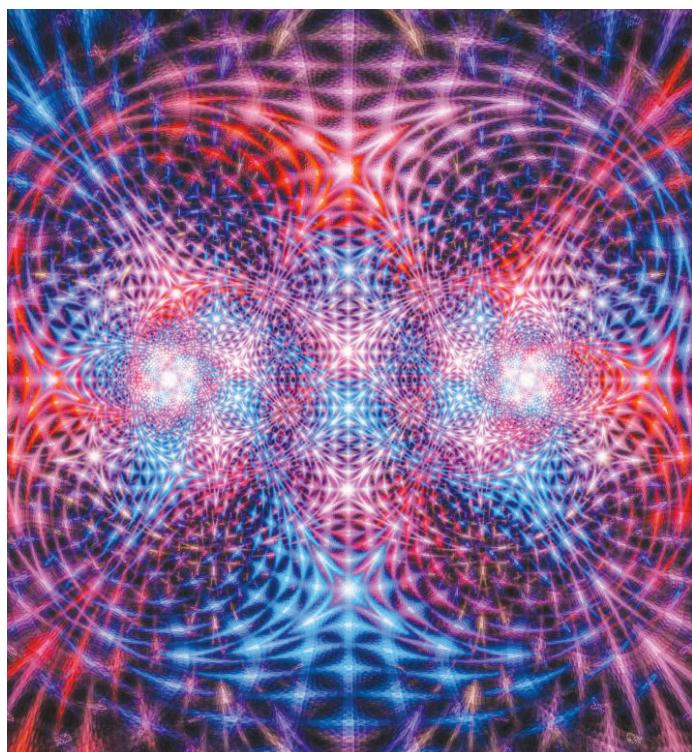


IMAGE COURTESY UNIVERSITY OF CHICAGO, ILLUSTRATION BY PETER ALLEN

entangled particles a long distance apart from one another without destroying their entanglement and thus severing their potential for quantum communication.

Teams of quantum physicists and computer scientists around the globe are working on building quantum communication systems, the most prominent being in the U.S. and China.

In the U.S., the pursuit of building the Quantum Internet gained significant traction in December 2018 when President Trump signed into law the National Quantum Initiative Act (H.R.6227), "to implement a National Quantum Initiative Program [that will] establish the goals and priorities for a 10-year plan to accelerate the development of quantum information science and technology applications."

In 2020, the Department of Energy announced the development of a "blueprint strategy of a national quantum internet, laying out the essential research to be accomplished, describing the engineering and design barriers, and setting near-term goals."

Continued on page 23

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Inside The Box

Continued from page 21

The effort to develop a national quantum internet also involves other federal agencies, including the National Science Foundation, the Department of Defense, the National Institute for Standards and Technology, the National Security Agency, and NASA, as well as various national laboratories, academic institutions, and tech industry companies. Basically, it's the same playbook for how the current Internet was invented and built.

To date, there have been many advances in quantum communication with the building of terrestrial "quantum loops" as well as the use of satellites for quantum communication. Meanwhile, ongoing advancements in quantum computing will be key to the creation and implementation of the Quantum Internet.

Quantum computing utilizes the quantum property of "superposition" to vastly enhance the speed and computational capacity of a computing device. Traditional computers use binary to store and process data. All data is either a 0 or a 1 in a traditional computer system. Every bit of information (text, pictures, videos, etc.) are stored in a computer system as just 1s and 0s.

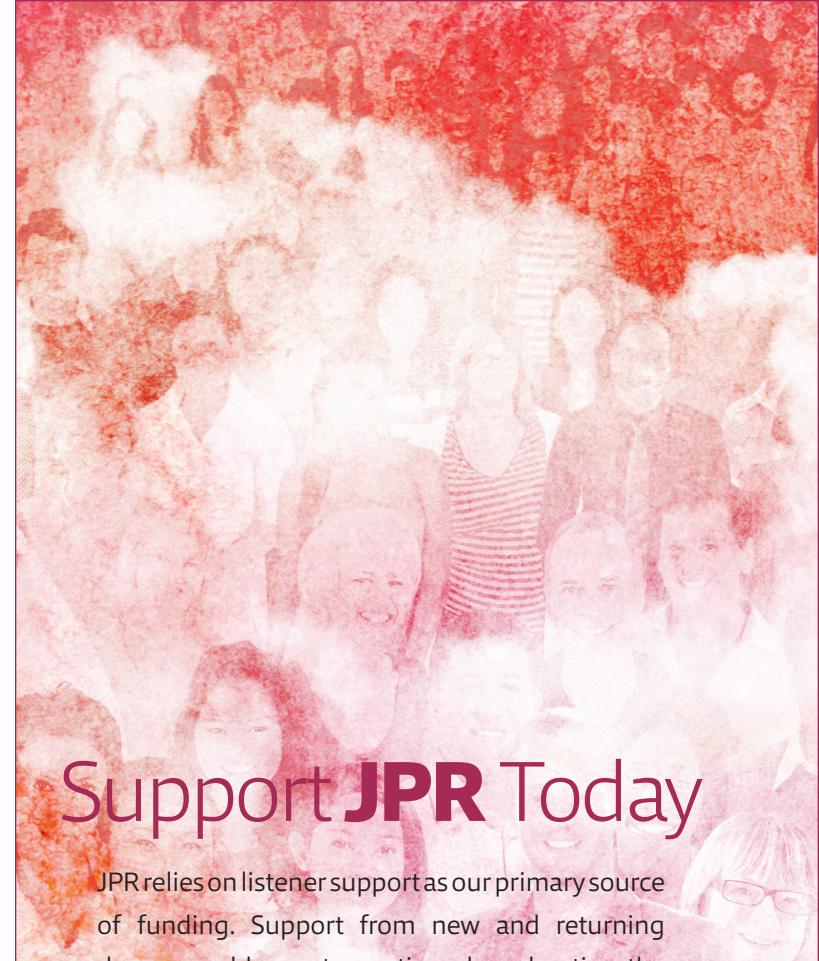
Quantum superposition enables data stored in a quantum computer system in the form of "qubits" (or quantum bits) to be 0 or 1 as well as 0 *and* 1 simultaneously, enabling quantum computers to solve complex calculations that would take traditional computers much longer. How much longer? A lot longer. For example, one of Google's quantum computers recently solved a classical computation challenge problem in 200 seconds that would have taken a classical computer 10,000 years to compute.

Where is all of this headed? Classical computing and the Internet as we know it today will be replaced by powerful quantum computers instantly communicating immense amounts of data via a Quantum Internet across vast distances through entanglement. This next generation of quantum computing and communications infrastructure will enable the development of artificial intelligence systems that make today's AI systems seem dumb, laying the foundation for the creation of an Artificial Super Intelligence (ASI) that will be far superior to the collective intelligence of all humanity, past, present, and future.

I won't be here for any of that but perhaps with continued exponential advances in technology, I'll have the option to have my brain scanned and all my memories and experiences (and perhaps some bits of wisdom too) turned into qubits to merge with AI systems and ride the light expanding into the void.



Scott Dewing is a technologist, writer, and educator. He lives in the State of Jefferson.



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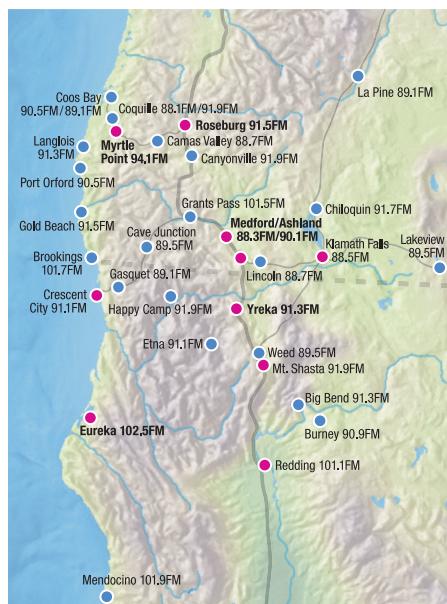
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Saturday

5:00am	Weekend Edition
8:00am	First Concert
10:00am	WFMT Radio Network
	Opera Series /
	Metropolitan Opera
2:00pm	Played in Oregon

3:00pm	The Chamber Music Society of Lincoln Center
4:00pm	All Things Considered
5:00pm	New York Philharmonic
7:00pm	State Farm Music Hall

Sunday

5:00am	Weekend Edition
9:00am	Millennium of Music
10:00am	Sunday Baroque
12:00pm	Siskiyou Music Hall
2:00pm	Performance Today Weekend
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Metropolitan Opera

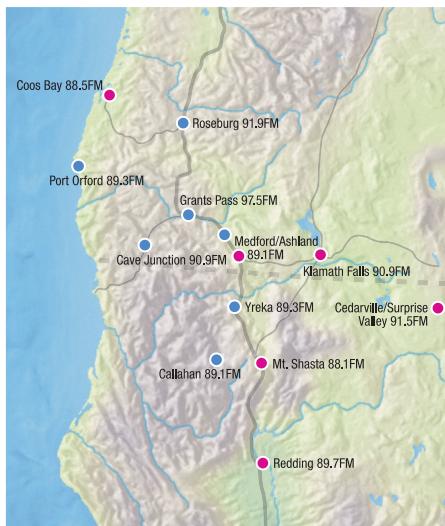
Dec 4 – *Eurydice* by Matthew Aucoin
Dec 11 – *Tosca* by Giacomo Puccini
Dec 18 – *The Magic Flute* by Wolfgang Amadeus Mozart
Dec 25 – *Aida* by Giuseppe Verdi



PHOTO COURTESY OF MET OPERA

With a libretto by Sarah Ruhl, adapted from her acclaimed 2003 play, the opera reimagines the familiar tale from Eurydice's point of view.

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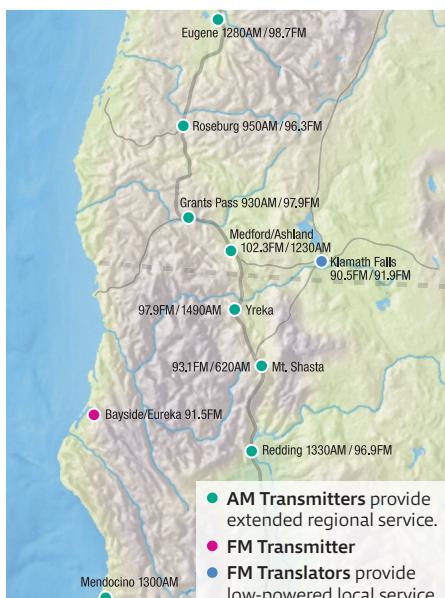
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- 8:00pm Undercurrents
- 3:00am World Café
- 5:00am Weekend Edition
- 9:00am Wait Wait...Don't Tell Me!
- 10:00am Radiolab
- 11:00am Snap Judgement
- 12:00pm E-Town
- 1:00pm Mountain Stage
- 3:00pm Folk Alley
- 5:00pm All Things Considered
- 6:00pm American Rhythm

Saturday

- 5:00am BBC World Service
- 7:00am 1A
- 8:00am The Jefferson Exchange
- 10:00am The Takeaway
- 11:00am Here & Now
- 1:00pm BBC News Hour
- 1:30pm The Daily
- 2:00pm Think
- 3:00pm Fresh Air
- 4:00pm PRI's The World
- 5:00pm On Point
- 6:00pm 1A
- 7:00pm Fresh Air (repeat)
- 8:00pm The Jefferson Exchange (repeat of 8am broadcast)
- 10:00pm BBC World Service

Sunday

- 5:00am BBC World Service
- 7:00am Inside Europe
- 8:00am Day 6

- 8:00pm Conversations from the World Café
- 9:00pm The Retro Lounge
- 10:00pm Late Night Blues
- 12:00am Undercurrents

Sunday

- 5:00am Weekend Edition
- 9:00am TED Radio Hour
- 10:00am This American Life
- 11:00am The Moth Radio Hour
- 12:00pm Jazz Sunday
- 2:00pm American Routes
- 4:00pm Sound Opinions
- 5:00pm All Things Considered
- 6:00pm The Folk Show
- 9:00pm Woodsongs
- 10:00pm The Midnight Special
- 12:00pm Mountain Stage
- 1:00am Undercurrents

- 9:00am Freakonomics Radio
- 10:00am Planet Money
- 11:00am Hidden Brain
- 12:00pm Living on Earth
- 1:00pm Science Friday
- 3:00pm To the Best of Our Knowledge
- 5:00pm Politics with Amy Walter
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- 8:00am On The Media
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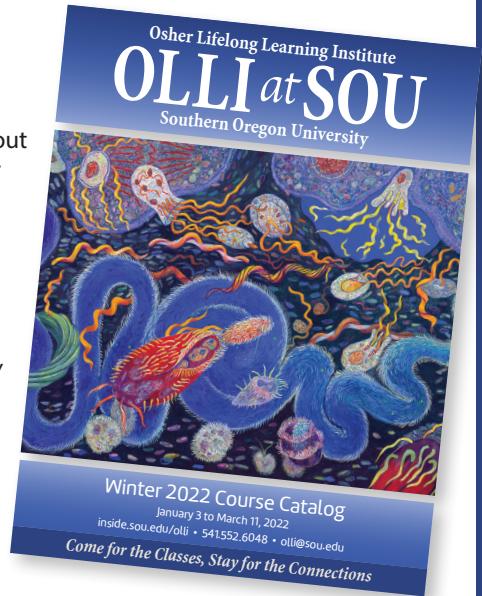
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APRIL EHRLICH

Southern Oregon Keeps Breaking Records For Unhealthy Air

Southern Oregon has seen record-breaking levels of wildfire smoke in recent years, leaving residents wondering what the future holds for the region.

After thirty years of living in the Rogue Valley, Teresa Safay has cleared out her Ashland home. She's moving out of the valley for good.

"I just don't feel safe here any more," she says.

Safay used to run a vacation rental business out of a wisteria-framed triplex – "just 98 steps from the Ashland Co-Op" – which was pretty successful during its first years.

"But then smoke started to play a really big influence in it all, and cancellations started coming in year after year" Safay says. "When the season that people are coming is unbearable, they don't come."

The last five summers have been rough. The Medford area was immersed in smoke for 26 days over the course of this summer, according to state data. Klamath Falls broke its own record with 41 days of smoke this year.

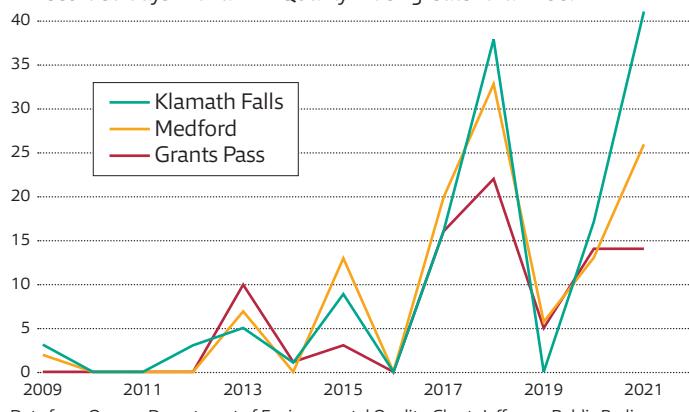
Wildfires and their smoke have been around for centuries. But before 2015, Southern Oregon rarely saw double-digit days of smoky air in a year. Since then, Southern Oregon has broken numerous smoke records, which has left some residents worried about the valley's future.

Last summer, smoke levels were off the charts across Oregon; the air got so hazardous that it topped off the state's air monitors. Much of that smoke came from the Almeda and Obenchain wildfires that destroyed about 2,600 homes in Jackson County.

That's when Safay decided that she needed to leave the valley. Why stay in a place where she could lose everything she

Total Days With Unhealthy Air

Data represents the total days in a year in which a region recorded days with an Air Quality Index greater than 100.



APRIL EHRLICH/JPR

Families at the Jackson County Expo read the news on Sept. 9, 2020, the day after the Almeda Fire destroyed thousands of homes. The fire released smoke that was so thick, it topped the state's air monitors.

has in a matter of hours? Or, at best, where she can't go outside during her favorite season?

"It's like being in a bowl of milk," Safay says. "It's just white everywhere and you can't see the sky. Last night, the full moon was so beautiful. It had been months since we got to see it."

Smoke's health impacts: the long and short of it

Southern Oregon University grad student Annie O'Shea's first summer in the Rogue Valley was marked by fear. The Almeda Fire started in town, and it was only a matter of wind direction that likely saved her new home.

This summer was also hard, when she was working on the campus farm through weeks of smoke.

"After a couple of hours, I'm out for the rest of the day because I get these throbbing headaches from it," O'Shea says.

O'Shea grew up in Northern California, so she was already somewhat familiar with smoke and fires, but not nearly at this level. She says these last two years in the valley convinced her not to stick around.

"My house smells like smoke; I go in the grocery store, you can see the smoke in the air in the store," O'Shea says. "There's not a lot of escaping it."

No amount of wildfire smoke is safe to breathe. It's made up of super tiny particles – it takes 30 of them to make up the width of a human hair – that can get lodged in the deep recesses of your lungs and potentially enter your bloodstream.

In the short term, it can trigger people's asthma or cause general breathing problems. The long-term effects are less studied, but there's some evidence that it could be linked to decreased birth weights and other adverse effects on pregnant women.

Many studies have concluded that the physical size of these fine particles is what makes them so dangerous to people's lungs. But new research suggests that the makeup of wildfire

smoke could actually be more damaging than other types of fine-particulate pollution.

“From an epidemiological point of view, these fine particles from wildfire smoke tend to have a more harmful effect, at least in terms of hospitalizations, than the same particles that come from other sources like traffic,” says Rosanna Aguilera, a staff researcher at UC San Diego.

Aguilera and her colleagues studied hospitalization data during smoky days in Southern California and published their findings this year in *Nature Communications*. They found that respiratory hospitalizations related to wildfire smoke are much higher than non-wildfire air pollution, even when the amount of pollution is the same.

Aguilera says toxicology studies suggest that wildfire smoke could be more harmful because of its temperature – it’s generally hotter than, say, traffic smog. Still, urban wildfires that burn through large swaths of residential neighborhoods are a relatively new phenomenon, so it’s hard to know exactly how inhaling those chemicals will impact people’s health in the coming years or decades.

“And it’s worth remembering that this is all happening against a backdrop of significant successes in terms of public health in regulating other forms of air pollution,” says UC San Diego researcher Tom Corrington, who worked with Aguilera on the 2021 study.

Traffic smog and other air pollution was much worse in the U.S. before the 1963 Clean Air Act, which has since ushered in several environmental regulations. The Environmental Protection Agency estimates that the U.S. every year saves trillions of dollars in health costs and lives saved because of this law and its amendments.

“Wildfire is a much more difficult problem,” Corrington says. “And so we have to start thinking about what the solutions are there.”

How Oregon is responding to smoke

When the smoke gets bad, public health agencies tell people to stay indoors, but not everyone has that option.

Farmworkers and construction workers spend most of their days outside – if they don’t, they’ll likely miss out on the income they need. The Oregon Occupational Safety and Health Division this year passed new rules aimed to protect workers. Among the stipulations, they require employers to provide respirators to their outdoor workers. Respirators are face masks that have an N95 or KN95 rating, meaning they filter out 95% of particulates. OSHA has also provided free respirators to employers.

At the same time, though, Oregon’s own health administration advises people not to rely on face respirators for protection,

because those masks need to be properly fitted to a person’s face, or they could be ineffective. There’s also a problem with counterfeit respirators. Even properly fitted and tested respirators might only provide “some protection,” according to the Oregon Health Authority.

People who are homeless also struggle to find respite from smoke, and many homes might not be well-insulated against especially bad air. Gov. Kate Brown this summer signed a massive wildfire bill that includes funding for “clean air centers” – public spaces where people can escape hazardous air.

“It could be a high school gymnasium or cafeteria or a large library,” says Sen. Jeff Golden of Ashland, who helped pass that bill. “Basically, we’re looking for relatively newer buildings that start with a good HVAC system, then they can retrofit those with HEPA filters and new technology.”

Local governments and nonprofits will soon be able to apply for those funds through the Oregon Department of Human Services, and Golden says these clean air centers could appear as early as next smoke season. A clean air center could be an overnight shelter or daytime only; it’s up to the grant applicant and managing agency.

Senate Bill 762 also opened up funds for the Oregon Health Authority to help low-income and medically vulnerable people buy air purifiers.

Still, Golden says these are short-term solutions to the long-term problem of climate change.

“None of that changes the very high likelihood that we have very hot, very dry, very flammable summers coming up,” Golden says. “I would say we have some rough sledding ahead.”



April Ehrlich began freelancing for Jefferson Public Radio in 2016. She officially joined the team as *Morning Edition* host and a *Jefferson Exchange* producer in August 2017.



Three men walk through a grass field as the Almeda Fire burns in the distance on Sept. 8, 2020. **INSET:** The Almeda Fire destroyed hundreds of mobile homes at parks across Jackson County. It released smoke that was so thick, it topped the state’s air monitors.

APRIL EHRЛИCH/JPR

Oregon Wolf's Epic Trip To Southern California Could Be Among The Century's Longest

An Oregon gray wolf's epic walkabout in Southern California is pushing the boundaries of the endangered species' range.

In late September, California wildlife officials received three reports of gray wolf sightings in Ventura County—one county up the coast from Los Angeles near the Los Padres National Forest. California Department of Fish and Wildlife staff then found recent wolf tracks in the same area.

The wolf is believed to be OR-93, a 2-year-old male from the White River pack, whose territory covers part of the Warm Springs Indian Reservation near Mount Hood.

"If this is OR-93, he's traveled the farthest south we've seen since 1922 when one was captured in San Bernardino," said Jordan Traverso, a spokesperson for the California wildlife agency.

The Ventura County reports indicated the wolf was wearing a purple collar. OR-93 was fitted with a purple tracking collar last summer before he dispersed south. That collar stopped transmitting in April from an area a little farther north in California.

"For the most part, he's been... staying away from any kind of city centers. However, he did cross over Highway 99 and Interstate 5, and both of those are major artery freeways in our state," she said.

OR-93 traveled through 16 California counties before his collar went silent. Traverso says it's "probable" that the wolf sighted is OR-93, but the agency won't know for sure without forensic evidence.

"If this wolf is in Ventura County, you're starting to get closer into the Santa Barbara area. But this is the northern (part of the county). It's very rural. It's not like he's at the beach with a whole bunch of people or anything like that," Traverso said.

Just as in Oregon, opinion is divided on the issues of allowing wolves to expand into California, reviving the species there a century after wolves were extirpated. Livestock producers are a strong voice of opposition.

Oregon removed gray wolves from its endangered species list in 2015. The Trump administration removed federal endangered species status last January. But wolves are still protected as an endangered species at the state level in California. All of California was historically gray wolf habitat.

"If you would have asked me even just a few years ago if I thought gray wolves would ever make it to Ventura County, I would have said 'You're crazy!'" said Pamela Flick, California program director for Defenders of Wildlife. "I think it's indicative of the fact that California has plentiful suitable habitat for wolves."

Defenders of Wildlife has been pressing the Biden administration to restore federal protections for gray wolves.

While Oregon has 23 wolf packs, California only has three—all in the northern part of the state.



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FILE – This February 2021 file photo released by California Department of Fish and Wildlife, shows a gray wolf (OR-93), near Yosemite, Calif., shared by the state's Department of Fish and Wildlife. The endangered gray wolf that traveled at least 1,000 miles from Oregon to California's Central Coast before his tracking collar stopped giving signals in the spring may still be alive and roaming in Ventura County.

It's common for young wolves to leave their home packs to find mates or look for food. They often travel long distances during these dispersals.

Oregon's original famous wandering wolf, OR-7, traveled from the Wallowa Mountains in northeast Oregon, down into California in 2011. The wolf eventually found a mate and established the Rogue Pack in the Siskiyou Mountains of southern Oregon.

But OR-93's journey has been even further than that. California officials estimate that OR-93 has traveled about 1000 miles (as the crow flies) on its journey from northern Oregon to Southern California.

"If one wolf could get down there, then that means that it's possible, and other could be too. So it's not out of the realm of possibility that he could find a mate," Traverso said.

While Oregon has 23 wolf packs, California only has three—all in the northern part of the state and all with some link to Oregon's now-defunct Rogue Pack.

Traverso says CDFW wants to trap and re-collar OR-93 so they can resume monitoring its travels but says without additional sightings that indicate the wolf's current location, it's not really feasible.



Jes Burns is a reporter for OPB's Science & Environment unit. Jes has a degree in English literature from Duke University and a master's degree from the University of Oregon's School of Journalism and Communications.



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It seems that we must expect a different kind of offering in future summers, with less activity in the open air: we now have a fifth season, fire season - and where there's fire there's smoke.

“Well are you welcome to the open air”

(Richard III, Part Two)

The summer of 2021 proved a difficult time for the performing arts in this region. Spikes in cases of Covid 19 imposed restrictions on audience capacity, while smoke from fires made performing outdoors a risky prospect; I've lost count of the number of performances of *Fannie* at OSF which were cancelled. It seems that we must expect a different kind of offering in future summers, with less activity in the open air: we now have a fifth season, fire season—and where there's fire there's smoke.

Meanwhile, two companies, founded before the pandemic, have recently tried to include open air performances in their range of productions. This column focusses on their fortunes in 2020-21 and their innovative responses to the new situation.

The Collaborative Theatre Project (CTP), led by Susan Aversa, began in Medford in 2016, and made the decision to establish a permanent base in the Village at Medford Center just opposite the Tinseltown cinema complex: parking is no problem! Its indoor productions since then have ranged from dramas like *The Diary of Anne Frank* to musicals such as *Death Takes a Holiday*. In addition, there has been a regular series called “Radio Days”—staged readings with sound effects in the style of classic radio drama. That series has continued since the pandemic struck, along with more conventional dramas, using small casts, and even one production last December (*One Christmas Carol*) which was filmed in the theatre and streamed to audiences locally and internationally.

One constant feature of the mission of CTP has been its commitment to children's theatre—not just performances for children to enjoy, but also productions with children as performers—most recently with no adults on stage with them. The ACT Out Programme under the leadership of Steven Dominguez and Leslie Dymond has most recently presented open air performances by children on the Plaza outside the theatre, including a bi-lingual performance of *Ferdinand the Bull*, which blended English and Spanish and which was presented free to the delighted audiences. Unfortunately, smoke and Covid made it impractical and unsafe to complete the planned schedule of shows, but CTP has great plans for this programme which includes growing it into a resource that can develop bilingual performances which will ultimately fold into a mainstage production. They have a bilingual *Don Quixote* in the works for 2022!

The Rogue Theater Company (RTC) began in 2019 in Ashland, under the leadership of Jessica Sage. It has much in com-

mon with CTP, not least that several actors have been featured in the casts of both companies: Mia Gaskin, Renee Hewitt, Hazel James and Pam Ward. RTC has a somewhat different set of aims, however. It is dedicated to presenting thought-provoking plays that inspire, entertain, and illuminate our common humanity, and Jessica is especially drawn to work which features strong female characters. The company did not aspire to have their own theatre, choosing instead to present their work in rented spaces across Ashland, including a planned event at the Ashland Springs Hotel in 2020 which had to be cancelled because of the pandemic.

That cancellation led Jessica to move their work to a completely different kind of venue—an open-air stage at Grizzly Peak Winery in Ashland, a space used before as a music venue but never for theatre. Its owners, Virginia and Al Silbowitz, have always been extremely supportive of the arts, and, when asked about RTC presenting plays, they welcomed the idea enthusiastically. At the time of writing, RTC have presented four productions at the winery, the first two were rehearsed readings (*A Walk in the Woods* and *Collected Stories*) and the second two full plays, presented with small casts, minimal props and no scenery, (*A Doll's House, Part Two*—the production originally scheduled for the Ashland Springs Hotel—and *Tiny Beautiful Things*). Their 2021 season is scheduled to conclude with a series of talks on Shakespeare by Barry Kraft (presented indoors and also available through streaming) and a final outdoor show—a one-woman show by Vilma Silva. All performances to date have been smoke-free and, like CTP, RTC's winery venue is blessed with ample parking!

Who knows what 2022 will hold for the performing arts? One can only hope that theatre can work with fewer restrictions and that groups are able to show their work in a range of venues to unmasked audiences. Companies like CTP and RTC have demonstrated that, with imagination, theatre can continue to flourish—and isn't imagination what theatre is all about?



Geoff Ridden has taught in universities in Africa, Europe and North America. Since moving to Ashland in 2008, he has become a familiar figure on radio, in the theatre, in the lecture hall and on the concert stage. He is artistic director of the Classic Readings Theatre Company and has a particular interest in adaptations of the plays of Shakespeare. Email geoff.ridden@gmail.com

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During the legislative session, critics from real estate, construction and agricultural industries again sounded alarms.

Oregon Has A New Plan To Protect Homes From Wildfire

The green metal roof on Mary Bradshaw's house gleams amid scorched earth and dead, blackened trees. All of the surrounding homes burned in last year's Beachie Creek Fire in Oregon's Santiam Canyon, but hers was untouched.

"We were shocked," Bradshaw said. "Having seen what the fire did, we really didn't expect it to be standing."

It's a shining example of how home-hardening measures can prevent houses from burning, even when they're surrounded by fire. Bradshaw and her husband built their home with concrete siding, a cement porch, no gutters or air vents on the metal roof, and no vegetation near the house. Those are all key fireproofing measures that experts recommend.

"We built it with fire in mind, although we never thought we would have a fire," Bradshaw said.

Oregon leaders are hoping some of these measures will help save homes from burning in future wildfires as summers in the West get hotter, drier and more fire-prone. But they have been the most controversial part of a sweeping new wildfire protection plan, facing pushback from property owners, and homebuilding and agricultural industries.

In a compromise of sorts, those groups, along with others, will now spend the next year advising state agencies on how to map out the state's most fire-prone areas and determine where the home-hardening rules will be required.

Most states don't require fire-resistant materials

California has mandated wildfire building codes in high-risk areas for more than a decade, but it's an outlier. An NPR analysis last year found most states don't require rebuilding with fire-resistant materials, and homebuilder associations have mounted stiff opposition to proposals to do so.

That happened in Oregon when officials first pushed for wildfire building codes several years ago. The Oregon Home Builders Association testified the measures would add substantial cost to a home's price, even though other assessments found fire-resistant homes would be minimally higher or even cheaper. The state did approve fire mitigation codes in 2019 but left them optional.

Then last year, raging wildfires in Oregon destroyed thousands of homes and killed nine people.

The wave of unprecedented destruction prompted lawmakers to pass a wide-ranging \$200 million wildfire bill to prevent another such catastrophe. It also includes more firefighting ca-



KRISTYNA WENTZ-GRAFF / OPB

Mary Bradshaw's fire-hardened home in Elkhorn, Oregon, on Feb. 26, 2021. It was one of few that survived the Beachie Creek fire in the area.

pacity, expanded forest management plans and clean air shelters to protect vulnerable people from smoke.

"I don't think any of us will forget the horror as we saw towns burned overnight, thousands evacuated their homes, leaving behind all of their belongings," Oregon Gov. Kate Brown said in signing the bill. "We were simply not equipped to fight the fires of this new age, which are faster and more fierce and fueled by the impacts of climate change."

Democratic state Sen. Jeff Golden, who led the effort to pass the bill, said it's important to know what parts of the state are most at risk from wildfire and prioritize action in those areas.

"Nobody's even beginning to think we're going to eliminate wildfire going forward but just reduce risks and protect communities," he said. "We're fighting for our survival in a very real way, and there's a lot of trends working against us."

Oregon will now map out which places face the highest fire risk

Fire-risk maps will have the biggest influence over which areas will see the strictest fire-safe building codes for new construction, Golden said. There will also be requirements for clearing out flammable material around homes.

A key sticking point will come down to defining the so-called wildland-urban interface, where residential areas meet forests and rangelands. It's the fastest-growing land use type and that, along with the warmer climate, is raising wildfire risk for communities across the country.

JPR News Focus: Fire

Continued from page 33

"We are looking for a balance between letting people do exactly what they want on their private property and responding to this existential threat," Golden said.

During the legislative session, critics from real estate, construction and agricultural industries again sounded alarms. They worried broad restrictions would increase costs for property owners, homebuilders and farmers and infringe on private property rights.

"If Sen. Golden thinks for a minute I'm going to cut down the 200-year-old, 200-foot-tall, old growth ponderosa pine in my yard he is mistaken," state Sen. Betsy Johnson said on a radio show. "I'm just not sure I want unseen, unaccountable, unelected bureaucrats dictating the future of the state of Oregon and how we all are going to live on our own property."

Opponents of the new rules are on the advisory committees that will help figure out where to require them. They include Mark Long, CEO of the Oregon Home Builders Association, and Dave Hunnicutt, president of the Oregon Property Owners Association. Hunnicutt said he worries the rules will not be applied narrowly enough.

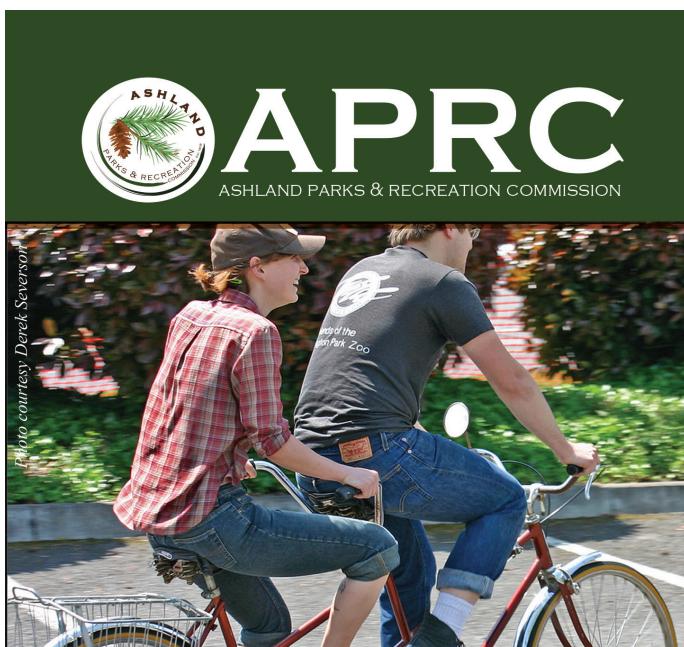


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Remains of the devastation from the 2020 Beachie Creek Fire are evident in the small town of Gates, Feb. 26, 2021.

LEFT: Mary Bradshaw's fire-hardened home in Elkhorn has no gutters that could collect flammable pine needles and leaves. There is also no roof vent that could allow in embers, and roofing and siding materials are composite, metal, clay or tile.

"We have a proposed definition of wildland-urban interface that will essentially include the entire state of Oregon," he said.

Meanwhile, a new program has already launched – with \$11 million in funding from the new law – to clear flammable brush from the "home ignition zone" in wildland-urban interface areas.

Jeff Parker, executive director of Northwest Youth Corps, said many communities have natural areas loaded with excess fuel that could send a fire burning faster and hotter toward nearby homes.

His workforce training group usually pays young people to clear weeds or build trails in wilderness areas, but now it will be spending more time in neighborhoods, basically doing extreme yardwork.

"Our objective here is to ... make sure our community has resiliency," Parker said. "So if a fire does roll through, it doesn't have the catastrophic impact, the mass displacement of people and the impact on the community."



Cassandra Profit is a reporter for OPB's Science & Environment unit.

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EMMA BOWMAN

With 3 Bold Marks, Indigenous Women Helped Revive A Once-Banned Tradition

Grete Bergman had long wanted to get traditional facial markings, a practice for Indigenous women in Alaska that European settlers tried to extinguish.

But in 2016, Bergman became one of the first among the Gwich'in Nation – First Nations peoples whose homelands stretch from northeast Alaska to northwest Canada – to get tattooed, in a return to a centuries-old tradition.

"My dad would have hated it," Bergman said. "He would have looked at me and he would have said, 'What the hell you do that for?'"

Her Alaska Native father, she said, was beaten in school for speaking the Gwich'in language, "because being Native was the worst possible thing you could be."

"I didn't know anyone who had their traditional markings," Bergman said, "and every time I brought it up, I always got the same sort of 'This is taboo. We don't do this.'"

The practice is at least 10,000 years old, but – as with language, food and other Indigenous customs – the practice fell out of use following bans and taboos set by European colonizers in the 1900s.

So, when Bergman saw a design that she was drawn to, it felt like a calling from her ancestors to reconnect.

"They are strong lines, bold lines – no fooling-around lines," Bergman, now 46, said.

Bergman went to see Inupiaq artist Sarah Whalen-Lunn, who she'd heard had just completed a yearlong training to learn the art of facial markings.

Traditional Alaskan Indigenous markings look like three lines – starting from below the bottom lip, drawn down the chin. The meanings and designs vary from one group to another and are specific to the traditions of each group, and the practice is often tied to a rite of passage or significant event.

Bergman was the first person Whalen-Lunn tattooed with the facial markings.

"When I came over to do your markings, I was nervous," said Whalen-Lunn, 43.

During the process, Bergman held hands with her daughter, who was 7 at the time.

"That moment was a changer for me," Whalen-Lunn said.

Bergman inspired her to get her own markings inked the following year.

"A lot of people are still scared," said Whalen-Lunn. "You all of a sudden became this pillar of strength to me."

The two women are carrying on the skin stitching tradition for their daughters – to show them it's OK to take pride in who you are, said Whalen-Lunn, who is a mother to three daughters.

"It's more than just your appearance. It changes the way that you carry yourself. And we're doing it so that our girls can," she said.

Bergman has two young girls of her own.

"I feel like I've given them something that my grandmother had taken away from her," she said.

Since Bergman got her Alaska Native markings, more and more women have come forward to participate in the practice.



COURTESY: CAMILA KERWIN/STORYCORPS



Emma Bowman
is a producer at NPR.

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Grete Bergman, left, and Sarah Whalen-Lunn at their StoryCorps recording in Anchorage, Alaska, in 2018.



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These folks really believe that they're fighting for all they hold dear against forces of darkness and chaos and evil.

Rage, Misinformation And Lousy Grammar: The Era Of Polite Disagreement Is Toast

Newsrooms are rarely dull.

That's because, like police stations and emergency departments, they're places where the human drama, in all its myriad messy and dysfunctional forms, is the main order of business.

Newsrooms have gotten even more lively in recent times, given the overheated tone of pretty much everything these days. And while it manifests in a jumble of hot-button issues and jacked-up concerns, the pandemic, and all the hyperventilating around vaccines and masks and such, lies at the heart of it.

Here at the JPR newsroom, we've been getting periodic emails that offer a look into this alternative universe.

For instance, consider this message after we aired a story about local hospitals overwhelmed by a wave of mostly-unvaccinated COVID-19 patients ...

As a employee of Asante your article ... is a blatant lie. Our hospitals are not overrun or at capacity. Stop lying or pay the price.

If that sounds vaguely threatening, that's because it is.

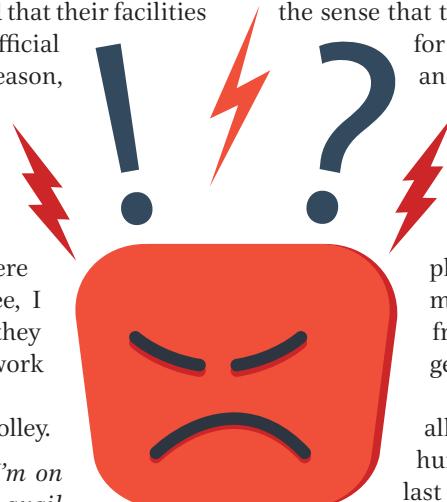
Since it's my job as news director to try to defuse these sorts of tensions, I politely replied to the listener that our reporting was based on direct statements, made in an open press conference, by Asante hospital officials, who stated that their facilities were, indeed, bursting at the seams. One official said, "If you come to our hospital for any reason, we might not be able to help you ... We're out of beds, our staff are stretched, and we have limited resources. We are trying, but we're running out of options."

Not a lot of ambiguity there.

Since the listener said he knew we were lying because he was an Asante employee, I checked with the folks at Asante. Seems they never heard of him, and he certainly didn't work for them.

Shortly after I replied, he fired a return volley.

*Go back to reporting school dips**t.... I'm on the front lines at Asante. Plenty of beds available... Only lying "journalists" like you consider facts and the truth to be a threat...*



So, here's a guy using an anonymous, encrypted email service, writing under a fake name, pretending to be something he's not, saying things that are provably untrue ... and threatening us for lying.

Or consider this Op-Ed gem that was emailed to one of our reporters after a similar report about overwhelmed hospitals. It came from the email account of a weed management company in Georgia (really) with this subject line: "Your a lying piece of s**t" (The original was unexpurgated.)

*Look at the CDC web site. No hospital icu are overwhelmed at all. You f**k stick piece of s**t. Lying mother f**ker. We will destroy all who stand in the way of our freedom. Btw cancer patients don't even use the icu f**kstick. They have there own unit at major hospitals. Piece of s**t*

Other emails have come from irate folks who accuse us of being paid shills for the drug companies and publishing "propaganda" because we've reported that medications such as ivermectin and hydroxychloroquine are not approved for treating COVID, and that the approved vaccines are safe and effective.

I'll resist the temptation to dwell on the poor spelling, lousy grammar and vulgarity that characterizes much of this fan mail. What's more striking to me is the intensity of the message, the sense that these folks really believe that they're fighting for all they hold dear against forces of darkness and chaos and evil.

While we in the media are one focus of this rage, politicians, school board members, election officials and pretty much anyone else who doesn't share that apocalyptic certainty are also considered fair game. People are being threatened and attacked at public meetings across the country, over everything from face masks to policies protecting transgender students.

It's the same intense, absolute certainty that allows no room for doubt or dissent that led hundreds of Americans to attack the U.S. Capitol last Jan. 6th. The sight of people who call themselves "patriots" using poles with Americans flags on them to spear police officers so they can ransack

Press Pass

Continued from page 39

the seat of our democracy in search of “traitorous” members of Congress, all to overturn an election result they refused to accept as legitimate. Each time I review those videos, I’m filled with a frustration and a sadness and a sense of futility I honestly don’t know what to do with.

I entered journalism nearly 30 years ago, believing that, if citizens in a democracy were given quality information, they could be trusted to make sound decisions to guide our society. That faith in the purpose and power of journalism has taken a beating over the years, especially recent years. But I don’t know what else to do about it.

So, we in the newsroom go back to work. We do our best to discern where the truth lies and to present that truth to our listeners and readers. We may get it wrong from time to time, and if we do we’ll fess up, correct it and work harder going forward to make sure what we report is accurate and well-founded.

Because, perhaps more than at any time in living memory, our communities need reliable information that cuts through the fog of confusion and misdirection and shines a light on the path forward.



Liam Moriarty has been covering news in the Pacific Northwest for more than 20 years. After a stint as JPR’s News Director from 2002 to 2005, Liam covered the environment in Seattle, then reported on European issues from France. He returned to JPR in 2013 as a regional reporter. Now, Liam is once again News Director, overseeing the expansion of the news department and leading the effort to make JPR the go-to source for news in Southern Oregon and Northern California.

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The Eagle Brewery And Saloon

There is at least one saloon at the center of most stories about the American West, so when the Southern Oregon University Laboratory of Anthropology (SOULA) was asked to dig into the history of one of our region's—and state's—oldest breweries, we jumped at the chance! Established in the 1850s, portions of the Eagle Brewery and Saloon survive today as part of Jacksonville's National Landmark District. Owners Ken Gregg and Frank De Luca take their stewardship of this historical site seriously, and as such, have asked SOULA to help locate and define the subsurface archaeological deposits on the property so that they can be considered as part of any future development at the site. While investigating one of the earliest breweries in the state is already intriguing, the story got even better when we stumbled upon the research of Tiah Edmunson-Morton of the Oregon State University Hops and Brewing Archives. We spoke with Tiah on a recent episode of *Underground History* about her research for a book on the role of women in Oregon's early breweries, including the Eagle Brewery's own Fredericka Wetterer who had a hand in keeping the business up and running for years.

Uncovering the hidden roles of 19th century women in places like Jacksonville is an exciting opportunity to update many of the tired tropes of the Wild West. In general, scholars have a lot of work to do to unpack the gender stereotypes of the

past (and present) and explore the complex identities of its people. Archaeology can play a leading role in those efforts. Over the decade plus I have been working in the Jacksonville area, I have seen the erasure of Native women in the documentary record, as well as the assumption that any women present must have been there at, and for, the pleasure of men. And I have barely scratched the surface of these untold stories. Therefore, it is my pleasure when I get to bust these myths and highlight the actual roles of women as wives, homesteaders, entrepreneurs, businesswomen, and as meaningful participants in their communities.

Fredericka Sage married Joseph Wetterer, owner of the Eagle Brewery and Saloon, in the early 1860s. Both were German immigrants, and together they had seven children, five of whom survived to adulthood. Joseph died in 1879, leaving Fredericka the executrix of his estate. The brewery went into foreclosure in 1881 and was subsequently purchased by Fredericka's father and returned to her. Fredericka ran the brewery and side distilling business throughout this period and continued to do so after she married William Heeley in 1883. The brewery was closed by the turn of the century, perhaps as one of the many casualties associated with the decline of Jacksonville after it was bypassed by the railroad. Heeley died in 1906, and Fredericka died in 1917. Her children continued to live on the property



Tiah Edmunson-Morton (left) and archaeologist Bridget Weiner excavate at the site of a former Eagle Brewery building.

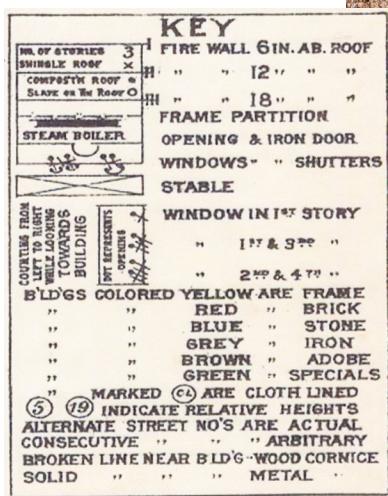
Underground History

Continued from page 41

into the mid-20th century and are remembered by long time Jacksonville residents, along with the dilapidated structures and pits associated with the early brewery.

While the archaeological investigation of the property is ongoing, the beer bottles, barrel straps, and structural materials found to date can provide clues about the historical brewing operations, and the buttons and suspender clips, food bones, and tableware will shed light on those who worked and lived there. In addition, we hope to further explore Fredericka's role in the business, how entwined the running of the brewery and household were, and the economic standing of the family over time. While Tiah continues to dig through the archives, we hope the material culture recovered at the site can help provide the intimate details of daily life not documented in newspapers, business and probate records, or the census population schedules.

Tiah's research has uncovered 137 breweries listing women as full or part owners in Oregon since 1984, and these women follow the dozens more that helped establish and maintain the brewing industry in the state since its beginning. You can about one of these women in Tiah's recent publication, "Maybe You've Heard of Her Husband? Finding Louisa Weinhard" (published in the summer 2021 issue of the *Oregon Historical Quarterly* and available free online), and you can follow Tiah's ongoing research into Fredericka and Oregon's other brewing women (and lots more!) on her blog: thebrewstorian.tumblr.com. Cheers!



Was it a pure coincidence that the sites went down just hours after Frances Haugen, a former Facebook employee turned whistleblower, was interviewed on *60 Minutes*?

Facebook Has Weakened Us

On Monday October 4, 2021 Facebook and Instagram went dark for several hours, giving us a chance to imagine our lives without ubiquitous social media. Did you enjoy it? Did you panic? Maybe you didn't notice the outage at all. Those three responses sum up society today.

Was it a pure coincidence that the sites went down just hours after Frances Haugen, a former Facebook employee turned whistleblower, was interviewed on *60 Minutes*? She pleaded for people over profits and then poof!

I blame Mark Zuckerberg for the fragility in today's young people and also the sense of entitlement that is spreading across our culture. Nothing new there, except this. I'm less concerned with the enveloping ecosphere Facebook has become than with what Zuckerberg thought he was building from his Harvard dorm room in 2004.

The Facebook was originally conceived as a dating site. So was YouTube, by the way. Our society has been shaped by what teenage boys fantasized about. Maybe societies have always been shaped the same way. Facebook and YouTube have grown to unimaginable scale, but hundreds of sites continue to start where these two began.

Dating sites always solve the same "problem." Their business models differ widely, but they always offer a voyeur's dream. You can see who is "available" without risking rejection. Zuckerberg's original idea was to assign a rating to each face, producing a user's own private book of faces – their own face book.

It quickly became apparent that these instant judgments could be done more instantly. Swipe right to accept; swipe left to reject – all anonymously. Only after two people have each approved of the other is the connection revealed and facilitated.

We know Facebook today as a place where people share their moral, societal, and political imperatives. But the engine that started it all was deeper. It was the biological imperative to find a mate, but without the pain that comes from rejection. You can see why this is an attractive option for users. But stay with me here.

Rejection hurts us, but it doesn't harm us. In fact, it strengthens us. Every survived snub gives us important information – first and foremost, that it didn't kill us. Positive connections are more meaningful because the fear of rejection was the cost of engagement. Overcoming that fear makes us hardier, individually and collectively.

Every digitally arranged marriage tests the wisdom of the algorithm, but the partners are never tested. They've taken

fewer risks. They don't know what it takes to survive. They are like farm-raised salmon, losing their instincts to spawn and return, whatever the cost. Protections have made them safer, but also more fragile.

I'm not sure you can teach creatures that rejection is not a mortal blow after their spawning urge has subsided. Only that biological imperative (aided by social pressure) makes that risk worth taking. We may be losing an entire generation of wild caught creatures, all to fulfill a 19-year-old boy's dorm room fantasy.

Talk to those who might not accept you. When rejection stops feeling like death, you've accomplished something for yourself and for society.



Don Kahle (fridays@dksez.com) writes a column each Friday for *The Register-Guard* and archives past columns at www.dksez.com.



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A Legacy of Public Radio...

So much has changed since JPR began in 1969. In many ways, public radio has grown up. What was once a struggling—almost experimental—operation has become a permanent and positive presence in the lives of so many in Southern Oregon and Northern California and across the nation.

We continue to seek and depend on regular membership contributions from supporters, especially new generations of listeners. But in the long run our future will depend, more and more, on special gifts from long-time friends who want to help Jefferson Public Radio become stronger and more stable.

One of the many ways that friends can choose to express their deep commitment to public radio here in our region is by supporting Jefferson Public Radio in their will or trust. This is a way to make a lasting contribution without affecting your current financial security and freedom.

To support Jefferson Public Radio in your will or trust consult your attorney or personal advisor. The legal description of our organization is: "The JPR Foundation, Inc., an Oregon non-profit tax-exempt corporation located in Ashland, Oregon."

If you would like more information about making a bequest to support Jefferson Public Radio call Paul Westhelle at 541-552-6301.



A Nature Notes Sampler II is a broad collection of radio commentaries based on Dr. Frank Lang's popular series that aired on JPR since the publication of the first volume in the year 2000. This collection of essays offers Dr. Lang's same eclectic, often humorous view of the natural world in the mythical State of Jefferson and beyond.

Over 100 of Dr. Lang's commentaries have been collected in this second volume. Make it your first collection of *Nature Notes*, or add it to the original publication for a complete set!

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Go to ijPR.org/FreeWill-JPR to learn more, and get started today!





Savory Bread Pudding With Mushrooms, Gruyère And Tarragon

For this hearty savory bread pudding, we took inspiration from a recipe in "Tartine" by Elisabeth Prueitt and Chad Robertson. Make sure to use crusty bread with a rustic, sturdy crumb; a soft, yielding loaf will yield a soggy, dense pudding. The egg-soaked bread mixture must stand for at least an hour (or up to 24 hours) before baking, so this dish offers make-ahead convenience. We prefer the flavor of the pudding made with chicken broth, but to make it vegetarian, use vegetable broth. Serve it warm for brunch, as a hearty side to a roast, or as a main with a simple leafy salad.

Don't trim off the crust from the bread; the crust bakes up with a chewiness and adds nice textural contrast to the pudding. Don't decrease the amount of oil for coating the baking dish; 3 tablespoons may seem excessive but it helps the bottom crust bake up browned and crisp.

3 HOURS, 50 MINUTES, PLUS COOLING | 12 SERVINGS

Ingredients

- 1 Pound loaf crusty white bread, cut into 1-inch pieces (about 12 cups)
- 9 Tablespoons extra-virgin olive oil, divided
- Kosher salt and ground black pepper
- 1½ Pounds cremini mushrooms, trimmed and thinly sliced
- 1 Medium yellow onion, finely chopped
- 6 Medium garlic cloves, minced
- 1 Cup dry white wine
- ¼ Cup finely chopped fresh tarragon
- 8 Ounces shredded gruyère cheese (2 cups)
- 10 Large eggs
- 3 Cups low-sodium chicken broth
- 1 Cup heavy cream
- ¼ Cup whole-grain mustard

Directions

1. Heat the oven to 350°F with a rack in the middle position. In a large bowl, toss the bread with 3 tablespoons oil and 1 teaspoon salt. Distribute the bread in an even layer on a rimmed baking sheet; reserve the bowl. Bake until light golden brown, about 20 minutes, stirring once halfway through. Let cool on the baking sheet.
2. Meanwhile, in a 12-inch skillet over medium-high, heat 3 tablespoons of the remaining oil until shimmering. Add the mushrooms, onion, garlic and 1 teaspoon each salt and pepper, then stir; the skillet will be very full. Cover and cook, stirring occasionally, until the mushrooms have released their moisture, about 3 minutes. Uncover and cook, stirring occasionally, until the moisture has evaporated and the mushrooms begin to sizzle, 5 to 7 minutes. Add the wine and cook, scraping up any browned bits, until the pan is dry, 5 to 7 minutes. Stir in the tarragon. Remove the skillet from the heat.
3. Coat a 9-by-13-inch baking dish with the remaining 3 tablespoons oil. To the reserved bowl, add the toasted bread and the mushroom mixture; toss to combine. Transfer to the prepared baking dish and distribute in an even layer; reserve the bowl again. Sprinkle the bread-mushroom mixture evenly with half the cheese.
4. In the same bowl whisk the eggs. Whisk in the broth, cream, mustard and 1 teaspoon pepper. Pour the egg mixture evenly over the bread-mushroom mixture. Cover and refrigerate for 1 hour or up to 24 hours.
5. When ready to bake, heat the oven to 350°F with a rack in the middle position. Uncover the baking dish and bake for 45 minutes. Sprinkle the remaining cheese evenly on the top, then continue to bake until golden brown and puffed, about 15 minutes. Cool on a wire rack for about 30 minutes. Serve warm.

Christopher Kimball's Milk Street in downtown Boston—at 177 Milk Street—is home to the editorial offices and cooking school. It also is where they record Christopher Kimball's Milk Street television and radio shows. Milk Street is changing how we cook by searching the world for bold, simple recipes and techniques. For more information, go to 177milkstreet.com. You can hear Milk Street Radio Sundays at 3:00pm on NPR's News & Information service.

POETRY

CHARLIE MCGONIGLE

Trailer Park

We live in canyons of tin that sing
in the heat and chant in the rain.

These are our castles.
This is our kingdom.

Mother Mary's statue promises
peace and protection.

Everyone needs a patron saint.

Satellite and TV antennas stand
sentry like medieval archers.
Welcoming friends. Turning away foes.

We guard our fortresses.

Call us trash and we'll compact
it and toss it on your front lawn.

We support our troops.

Chubby little gnomes and one-
legged flamingos stand near
miniature bird baths.

Always the joke. Vandals have seen the evil.

These are our castles. Separated
by moats of turf and degrees of faith.

We hitch our lives to our homes
and compact our hope.

Charlie McGonigle lives in Klamath Falls, and he somehow managed to survive 31 years of teaching junior high. He has been a fan of poetry since high school and on occasion he has submitted poems to small publications. Miraculously he has somehow managed to slip a couple past the goalie. Recent goals include trying to go as long possible without yelling at the neighbor kids to get the hell off his lawn.

Travels

leave in spoiled rotten fear
cross an ocean of four blocks
enter a building that could bury a pharaoh

move to bells
march like soldiers

hand over heart for the new rainbow

white glue only
scissors make you bleed

midget milk cartons
don't eat clay even if its smell haunts you

rulers were meant for knuckles

pee into caverns
cry at the needle that saves you from crutches

last bell out
race back and hold tight
burrow into new snow
explore lost stars

Writers may submit original poetry for publication in *Jefferson Journal*. Email 3–6 poems, a brief bio, and your mailing address in one attachment to jeffmopoetry@gmail.com, or send 3–6 poems, a brief bio, and a self-addressed, stamped envelope to:

Amy Miller, Poetry Editor

Jefferson Journal

1250 Siskiyou Blvd.

Ashland, OR 97520

Please allow eight weeks for reply.

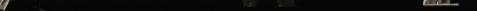
REDDING'S HISTORIC



CASCADE THEATRE

POSTMODERN JUKEBOX

THE GRAND
REOPENING TOUR
NOVEMBER 12



THE MAVERICKS

EN ESPAÑOL WORLD TOUR
NOVEMBER 13

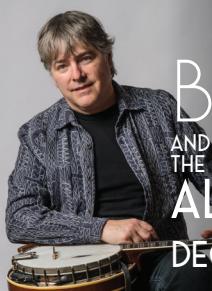


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BELA FLECK AND THE BLUEGRASS ALLSTARS

DECEMBER 10



PUNCH BROTHERS

JANUARY 14



Tomáseen Foley's **A Celtic Christmas**

DECEMBER 21

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